

FIGURE 1

***Staphylothermus marinus* - F1-12LC**

1	ATG TCT TTA AAC AAG CAC TCT TGG ATG GAT ATG ATA ATA TTT ATT CTC AGC TTT TCT TTC	60
1	Met Ser Leu Asn Lys His Ser Trp Met Asp Met Ile Ile Phe Ile Leu Ser Phe Ser Phe	20
61	CCA TTA ACA ATG ATC GCA TTA GCT ATC TCT ATG TCG TCA TGG TTT AAT ATA TGG AAT AAT	120
21	Pro Leu Thr Met Ile Ala Leu Ala Ile Ser Met Ser Ser Trp Phe Asn Ile Trp Asn Asn	40
121	GCA TTA AGC GAT CTA GGA CAT GCT GTT AAA AGC AGT GTT GCT CCA ATA TTC AAT CTA GGT	180
41	Ala Leu Ser Asp Leu Gly His Ala Val Lys Ser Ser Val Ala Pro Ile Phe Asn Leu Gly	60
181	CTT GCA ATT GGT GGG ATA CTA ATT GTT ATA GTT GGT TTA AGA AAT CTT TAT TCG TGG AGT	240
61	Leu Ala Ile Gly Gly Ile Leu Ile Val Ile Val Gly Leu Arg Asn Leu Tyr Ser Trp Ser	80
241	AGA GTT AAA GGA TCT TTA ATC ATA TCC ATG GGT GTA TTT CTT AAC TTA ATA GGG GTT TTC	300
81	Arg Val Lys Gly Ser Leu Ile Ile Ser Met Gly Val Phe Leu Asn Leu Ile Gly Val Phe	100
301	GAC GAA GTA TAT GGT TGG ATA CAT TTC CTA GTC TCA GTA TTG TTT TTC TTA TCA ATA ATA	360
101	Asp Glu Val Tyr Gly Trp Ile His Phe Leu Val Ser Val Leu Phe Phe Leu Ser Ile Ile	120
361	GCA TAT TTC ATA GCT ATA TCA ATA CTT GAC AAA TCA TGG ATA GCT GTT CTA CTA ATA ATA	420
121	Ala Tyr Phe Ala Ile Ser Ile Leu Asp Lys Ser Trp Ile Ala Val Leu Leu Ile Ile	140
421	GGT CAT ATT GCA ATG TGG TAT CTA CAC TTT GCT TCA GAG ATT CCG AGA GGT GCG GCT ATT	480
141	Gly His Ile Ala Met Trp Tyr Leu His Phe Ala Ser Glu Ile Pro Arg Gly Ala Ala Ile	160
481	CCC GAG TTA TTA GCG GTA TTC TCG TTT TTA CCA TTC TAT ATA AGA GAC TAT TTT AAA TCA	540
161	Pro Glu Leu Leu Ala Val Phe Ser Phe Leu Pro Phe Tyr Ile Arg Asp Tyr Phe Lys Ser	180
541	TAC ACT AAA CGA TAG	555
181	Tyr Thr Lys Arg End	185

FIGURE 2

Pyrodictium - TAG11-17LC

1	ATG AAA CTC CTT GAG CCC ACA AAT ACC TCC TAC ACG CTG TTA CAG GAT TTA GCA TTG CAT	60
1	Met Lys Leu Leu Glu Pro Thr Asn Thr Ser Tyr Thr Leu Leu Gln Asp Leu Ala Leu His	20
61	TTT GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG TGG TTA CCC GGT GTC CTA GTC CGG GGC	120
21	Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp Leu Pro Gly Val Leu Val Arg Gly	40
121	GTA GCT GTG GAC ACA GGG GTG GCT CGG GTG CCT GGG CTC GGC CGG CGC GGT AAG AGG CTG	180
41	Val Ala Val Asp Thr Gly Val Ala Arg Val Pro Gly Leu Gly Arg Arg Gly Lys Arg Leu	60
181	CTC CTG GCC GCT GTG GCT GTC TTG GCG CTT GTT GTG TCC GTT GTC CCG GCT TAT GTG	240
61	Leu Leu Ala Ala Val Leu Ala Leu Val Val Ser Val Val Val Pro Ala Tyr Val	80
241	GCG TAT AGT AGT CTG CAC CCG GAG AGC TGT CGG CCC GTT GCG CCG GAG GGG CTC ACC TAC	300
81	Ala Tyr Ser Ser Leu His Pro Glu Ser Cys Arg Pro Val Ala Pro Glu Gly Leu Thr Tyr	100
301	AAA GAG TTC AGC GTG ACC GCG GAG GAT GGC TTG GTG GTT CGG GGC TGG GTG CTG GGC CCC	360
101	Lys Glu Phe Ser Val Thr Ala Glu Asp Gly Leu Val Val Arg Gly Trp Val Leu Gly Pro	120
361	GGC GCT GGG GGC AAC CCG GTG TTC GTT TTG ATG CAC GGG TAT ACT GGG TGC CGC TCG GCG	420
121	Gly Ala Gly Asn Pro Val Phe Val Leu Met His Gly Tyr Thr Gly Cys Arg Ser Ala	140
421	CCC TAC ATG GCT GTG CTG GCC CGG GAG CTC GTG GAG TGG GGG TAC CCG GTG GTT GTG TTC	480
141	Pro Tyr Met Ala Val Ala Arg Glu Leu Val Glu Trp Gly Tyr Pro Val Val Val Phe	160
481	GAC TTC CGG GGC CAC GGG GAG AGC GGG GGC TCG ACG ACG ATT GGG CCC CGG GAG GTG CTG	540
161	Asp Phe Arg Gly His Gly Glu Ser Gly Ser Thr Thr Ile Gly Pro Arg Glu Val Leu	180
541	GAT GCC CGG GCT GTG GTG GGC TAT GTC TCG GAG CGG TTC CCC GGC CGC CGG ATA ATA TTG	600
181	Asp Ala Arg Ala Val Val Gly Tyr Val Ser Glu Arg Phe Pro Gly Arg Arg Ile Ile Leu	200
601	GTG GGG TTC AGT ATG GGC GCT GTA GCG ATC GTG GAG GGT GCT GGG GAC CCG CGG GTC	660
201	Val Gly Phe Ser Met Gly Ala Val Ala Ile Val Glu Gly Ala Gly Asp Pro Arg Val	220
661	TAC GCG GTG GCT GCT GAT AGC CCG TAC TAT AGG CTC CGG GAC GTC ATA CCC CGG TGG CTG	720
221	Tyr Ala Val Ala Ala Asp Ser Pro Tyr Tyr Arg Leu Arg Asp Val Ile Pro Arg Trp Leu	240
721	GAG TAC AAG ACG CCG CTG CCG GGC TGG GTG GGT GTG CTG GCC GGG TTC TAC GGG AGG CTG	780
241	Glu Tyr Lys Thr Pro Leu Pro Gly Trp Val Gly Val Leu Ala Gly Phe Tyr Gly Arg Leu	260
781	ATG GCG GGC GTT GAC CTC GGC TTC GGC CCC GCT GGG GTG GAG CGC GTG GAT AAG CCG TTG	840
261	Met Ala Gly Val Asp Leu Gly Phe Pro Ala Gly Val Glu Arg Val Asp Lys Pro Leu	280
841	CTG GTG GTG TAT GGG CCC CGG GAC CCG CTG GTG ACG CGG GAC GAG GCG AGG AGC CTG GCG	900
281	Leu Val Val Tyr Gly Pro Arg Asp Pro Leu Val Thr Arg Asp Glu Ala Arg Ser Leu Ala	300

901 TCC CGT AGC CCG TGT GGC CGT CTC GTC GAG GTT CCT GGG GCT GGC CAC GTG GAG GCC GTG 960
301 Ser Arg Ser Pro Cys Gly Arg Leu Val Glu Val Pro Gly Ala Gly His Val Glu Ala Val 320

961 GAT GTG CTC GGG CCG GGC CGC TAC GCA GAC ATG CTG ATA GAG CTG GCG CAC GAG GAG TGC 1020
321 Asp Val Leu Gly Pro Gly Arg Tyr Ala Asp Met Leu Ile Glu Leu Ala His Glu Glu Cys 340

1021 CCT CCG GGG GCC GGT GGC TGA 1041
341 Pro Pro Gly Ala Gly End 347

L D O E P F C E S n A E M P A H O d.

FIGURE 3

Archaeoglobus Venificus SN P6-24LC

1	ATG CCA TAT GTT AGG AAT GGT GGT GTA AAT ATC TAT TAT GAA CTG GTG GAT GGA CCT GAG	60
1	Met Pro Tyr Val Arg Asn Gly Gly Val Asn Ile Tyr Tyr Glu Leu Val Asp Gly Pro Glu	20
61	CCA CCA ATT GTC TTT GTT CAC GGA TGG ACA GCA AAT ATG AAT TTT TGG AAA GAG CAA AGA	120
21	Pro Pro Ile Val Phe Val His Gly Trp Thr Ala Asn Met Asn Phe Trp Lys Glu Gln Arg	40
121	CGT TAT TTT GCA GGC AGG AAT ATG ATG TTG TTT GTC GAT AAC AGA GGT CAT GGC AGG TCC	180
41	Arg Tyr Phe Ala Gly Arg Asn Met Met Leu Phe Val Asp Asn Arg Gly His Gly Arg Ser	60
181	GAT AAG CCA CTT GGA TAC GAT TTC TAC AGA TTT GAG AAC TTC ATT TCA GAT TTA GAT GCG	240
61	Asp Lys Pro Leu Gly Tyr Asp Phe Tyr Arg Phe Glu Asn Phe Ile Ser Asp Leu Asp Ala	80
241	GTT GTT AGG GAG ACT GGA GTG GAG AAA TTT GTT CTC GTC GGA CAT TCA TTC GGA ACA ATG	300
81	Val Val Arg Glu Thr Gly Val Glu Lys Phe Val Leu Val Gly His Ser Phe Gly Thr Met	100
301	ATC TCT ATG AAG TAC TGT TCG GAG TAT CGG AAT CGG GTT CTT GCT CTA ATC CTC ATA GGT	360
101	Ile Ser Met Lys Tyr Cys Ser Glu Tyr Arg Asn Arg Val Leu Ala Leu Ile Leu Gly	120
361	GGT GGG AGC AGA ATA AAG CTT CTA CAC AGA ATT GGA TAT CCT TTA GCA AAG ATT CTT GCA	420
121	Gly Gly Ser Arg Ile Lys Leu Leu His Arg Ile Gly Tyr Pro Leu Ala Lys Ile Leu Ala	140
421	TCC ATT GCA TAC AAG AAG TCT TCA AGA TTG GTC GCA GAT CTT TCC TTT GGC AAA AAT GCT	480
141	Ser Ile Ala Tyr Lys Ser Ser Arg Leu Val Ala Asp Leu Ser Phe Gly Lys Asn Ala	160
481	GGT GAA CTT AAA GAG TGG GGA TGG AAA CAG GCA ATG GAT TAT ACA CCC TCC TAC GTG GCA	540
161	Gly Glu Leu Lys Glu Trp Gly Trp Lys Gln Ala Met Asp Tyr Thr Pro Ser Tyr Val Ala	180
541	ATG TAC ACG TAC AGA ACT CTA ACG AAA GTG AAT CTT GAA AAT ATC TTG GAG AAA ATA GAC	600
181	Met Tyr Thr Arg Thr Leu Thr Lys Val Asn Leu Glu Asn Ile Leu Glu Lys Ile Asp	200
601	TGT CCA ACA CTG ATT ATC GTT GGA GAA GAG GAT GCA CTA TTG CCC GTT AGC AAA TCA GTT	660
201	Cys Pro Thr Leu Ile Ile Val Gly Glu Glu Asp Ala Leu Leu Pro Val Ser Lys Ser Val	220
661	GAG CTG AGC AGG AGG ATA GAA AAC TCA AAG CTT GTG ATC ATC CCA AAC TCG GGG CAT TGC	720
221	Glu Leu Ser Arg Arg Ile Glu Asn Ser Lys Leu Val Ile Ile Pro Asn Ser Gly His Cys	240
721	GTA ATG CTT GAG AGT CCA AGT GAG GTT AAT AGA GCA ATG GAC GAA TTC ATT TCT TCA GCA	780
241	Val Met Leu Glu Ser Pro Ser Glu Val Asn Arg Ala Met Asp Glu Phe Ile Ser Ser Ala	260
781	CAG TTC TAA	789
261	Gln Phe End	263

FIGURE 4

***Aquifex pyrophilus* - 28LC**

1	TTG AGA TTG AGG AAA TTT GAA GAG ATA AAC CTC GTT CTT TCG GGA GGA GCT GCA AAG GGC	60
1	Leu Arg Leu Arg Lys Phe Glu Glu Ile Asn Leu Val Leu Ser Gly Gly Ala Ala Lys Gly	20
61	ATA GCC CAC ATA GGT GTT TTG AAA GCT ATA AAC GAG CTC GGT ATA AGG GTG AGG GCT TTA	120
21	Ile Ala His Ile Gly Val Leu Lys Ala Ile Asn Glu Leu Gly Ile Arg Val Arg Ala Leu	40
121	AGC GGG GTG AGC GCC GGG GCA ATC GTT TCG GTC TTT TAT GCC TCA GGC TAC TCC CCT GAA	180
41	Ser Gly Val Ser Ala Gly Ala Ile Val Ser Val Phe Tyr Ala Ser Gly Tyr Ser Pro Glu	60
181	GGG ATG TTC AGC CTT CTG AAG AGG GTA AAC TGG CTG AAG CTG TTT AAG TTC AAG CCA CCT	240
61	Gly Met Phe Ser Leu Leu Lys Arg Val Asn Trp Leu Lys Phe Lys Pro Pro	80
241	CTG AAG GGA TTG ATA GGG TGG GAG AAG GCT ATA AGA TTC CTT GAG GAA GTT CTC CCT TAC	300
81	Leu Lys Gly Leu Ile Gly Trp Glu Lys Ala Ile Arg Phe Leu Glu Val Leu Pro Tyr	100
301	AGG AGA ATA GAA AAA CTT GAG ATA CCG ACG TAT ATA TGC GCG ACG GAT TTA TAC TCG GGA	360
101	Arg Arg Ile Glu Lys Leu Glu Ile Pro Thr Tyr Ile Cys Ala Thr Asp Leu Tyr Ser Gly	120
361	AGG GCT CTA TAC CTC TCG GAA GGG AGT TTA ATC CCC GCA CTT CTC GGC AGC TGT GCA ATT	420
121	Arg Ala Leu Tyr Leu Ser Glu Gly Ser Leu Ile Pro Ala Leu Leu Gly Ser Cys Ala Ile	140
421	CCC GGC ATA TTT GAA CCC GTT GAG TAT AAG AAT TAC TTG CTC GTT GAC GGA GGT ATA GTT	480
141	Pro Gly Ile Phe Glu Pro Val Glu Tyr Lys Asn Tyr Leu Leu Val Asp Gly Ile Val	160
481	AAC AAC CTT CCC GTT GAG CCC TTT CAG GAA AGC GGT ATT CCC ACC GTT TGC GTT GAT GTC	540
161	Asn Asn Leu Pro Val Glu Pro Phe Gln Glu Ser Gly Ile Pro Thr Val Cys Val Asp Val	180
541	CTT CCC ATA GAG CCG GAA AAG GAT ATA AAG AAC ATT CTT CAC ATC CTT TTG AGG AGC TTC	600
181	Leu Pro Ile Glu Pro Glu Lys Asp Ile Lys Asn Ile Leu His Ile Leu Leu Arg Ser Phe	200
601	TTT CTT GCG GTC CGC TCA AAC TCC GAA AAG AGA AAG GAG TTT TGT GAC CTC GTT ATA GTT	660
201	Phe Leu Ala Val Arg Ser Asn Ser Glu Lys Arg Lys Glu Phe Cys Asp Leu Val Ile Val	220
661	CCT GAG CTT GAG GAG TTC ACA CCC CTT GAT GTT AGA AAA GCG GAC CAA ATA ATG GAG AGG	720
221	Pro Glu Leu Glu Phe Thr Pro Leu Asp Val Arg Lys Ala Asp Gln Ile Met Glu Arg	240
721	GGA TAC ATA AAG GCC TTA GAG GTA CTT TCT GAA TAG	756
241	Gly Tyr Ile Lys Ala Leu Glu Val Leu Ser Glu End	252

FIGURE 5

M11TL-29L.

1	ATG TTT AAT ATC AAT GTC TTT GTT AAT ATA TCT TGG CTG TAT TTT TCA GGG ATA GTT ATG	60
1	Met Phe Asn Ile Asn Val Phe Val Asn Ile Ser Trp Leu Tyr Phe Ser Gly Ile Val Met	20
61	AAG ACT GTG GAA GAG TAT GCG CTA CTT GAA ACA GGC GTA AGA GTG TTT TAT CGG TGT GTA	120
21	Lys Thr Val Glu Glu Tyr Ala Leu Leu Glu Thr Gly Val Arg Val Phe Tyr Arg Cys Val	40
121	ATC CCG GAG AAA GCT TTT AAC ACT TTG ATA ATA GGT TCA CAC GGA TTG GGG GCG CAC AGT	180
41	Ile Pro Glu Lys Ala Phe Asn Thr Leu Ile Ile Gly Ser His Gly Leu Gly Ala His Ser	60
181	GGA ATC TAC ATT AGT GTT GCT GAA GAA TTT GCT AGG CAC GGA TTT GGA TTC TGC ATG CAC	240
61	Gly Ile Tyr Ile Ser Val Ala Glu Glu Phe Ala Arg His Gly Phe Gly Phe Cys Met His	80
241	GAT CAA AGG GGA CAT GGG AGA ACG GCA AGC GAT AGA GAA AGA GGG TAT GTG GAG GGC TTT	300
81	Asp Gln Arg Gly His Gly Arg Thr Ala Ser Asp Arg Glu Arg Gly Tyr Val Glu Gly Phe	100
301	CAC AAC TTC ATA GAG GAT ATG AAG GCC TTC TCC GAT TAT GCC AAG TGG CGC GTG GGA GGT	360
101	His Asn Phe Ile Glu Asp Met Lys Ala Phe Ser Asp Tyr Ala Lys Trp Arg Val Gly Gly	120
361	GAC GAA ATA ATA TTG CTA GGA CAC AGT ATG GGC GGG CTG ATA GCG CTC TTA ACA GTT GCA	420
121	Asp Glu Ile Ile Leu Leu Gly His Ser Met Gly Gly Leu Ile Ala Leu Leu Thr Val Ala	140
421	ACT TAT AAA GAA ATC GCC AAG GGA GTT ATC GCG CTA GCC CCG GCC CTC CAA ATC CCC TTA	480
141	Thr Tyr Lys Glu Ile Ala Lys Gly Val Ile Ala Leu Ala Pro Ala Leu Gln Ile Pro Leu	160
481	ACC CCG GCT AGA AGA CTT GTT CTA AGC CTC GCG TCA AGG CTT GCC CCG CAT TCT AAG ATC	540
161	Thr Pro Ala Arg Arg Leu Val Leu Ser Leu Ala Ser Arg Leu Ala Pro His Ser Lys Ile	180
541	ACC TTA CAA AGG AGA TTG CCG CAG AAA CCA GAG GGT TTT CAA AGA GCA AAA GAT ATA GAA	600
181	Thr Leu Gln Arg Arg Leu Pro Gln Lys Pro Glu Gly Phe Gln Arg Ala Lys Asp Ile Glu	200
601	TAC AGT CTG AGT GAA ATA TCA GTC AAG CTC GTG GAC GAA ATG ATT AAA GCA TCA TCT ATG	660
201	Tyr Ser Leu Ser Glu Ile Ser Val Lys Leu Val Asp Glu Met Ile Lys Ala Ser Ser Met	220
661	TTC TGG ACC ATA GCA GGG GAA ATT AAT ACT CCC GTC CTG CTT ATT CAT GGG GAA AAA GAC	720
221	Phe Trp Thr Ile Ala Gly Glu Ile Asn Thr Pro Val Leu Leu Ile His Gly Glu Lys Asp	240
721	AAT GTC ATA CCT CCG GAG GCG AGC AAA AAA GCC TAC CAA TTA ATA CCT TCA TTC CCT AAA	780
241	Asn Val Ile Pro Pro Glu Ala Ser Lys Lys Ala Tyr Gln Leu Ile Pro Ser Phe Pro Lys	260
781	GAG TTG AAA ATA TAC CCC GAT CTT GGA CAC AAC TTG TTT TTT GAA CCA GGC GCG GTG AAA	840
261	Glu Leu Lys Ile Tyr Pro Asp Leu Gly His Asn Leu Phe Phe Glu Pro Gly Ala Val Lys	280
841	ATC GTC ACA GAC ATT GTA GAG TGG GTT AAG AAT CTA CCC AGG GAA AAT CCT TAA	894

281 Ile Val Thr Asp Ile Val Glu Trp Val Lys Asn Leu Pro Arg Glu Asn Pro End 298

FIGURE 6

Thermococcus CL-2-30LC

1	ATG GAG GTT TAC AAG GCC AAA TTC GGC GAA GCA AAG CTC GGC TGG GTC GTT CTG GTT CAT	60
1	Met Glu Val Tyr Lys Ala Lys Phe Gly Ala Lys Leu Gly Trp Val Val Leu Val His	20
61	GGC CTC GGC GAG CAC AGC GGA AGG TAT GGA AGA CTG ATT AAG GAA CTC AAC TAT GCC GGC	120
21	Gly Leu Gly Glu His Ser Gly Arg Tyr Gly Arg Leu Ile Lys Glu Leu Asn Tyr Ala Gly	40
121	TTT GGA GTT TAC ACC TTC GAC TGG CCC GGC CAC GGG AAG AGC CCG GGC AAG AGA GGG CAC	180
41	Phe Gly Val Tyr Thr Phe Asp Trp Pro Gly His Ser Pro Gly Lys Arg Gly His	60
181	ACG AGC GTC GAG GAG GCG ATG GAA ATC ATC GAC TCG ATA ATC GAG GAG ATC AGG GAG AAG	240
61	Thr Ser Val Glu Glu Ala Met Glu Ile Ile Asp Ser Ile Ile Glu Glu Ile Arg Glu Lys	80
241	CCC TTC CTC TTC GGC CAC AGC CTC GGT GGT CTA ACT GTC ATC AGG TAC GCT GAG ACG CGG	300
81	Pro Phe Leu Phe Gly His Ser Leu Gly Leu Thr Val Ile Arg Tyr Ala Glu Thr Arg	100
301	CCC GAT AAA ATA CGG GGA TTA ATA GCT TCC TCG CCT GCC CTC GCC AAG AGC CCG GAA ACG	360
101	Pro Asp Lys Ile Arg Gly Leu Ile Ala Ser Ser Pro Ala Leu Ala Lys Ser Pro Glu Thr	120
361	CCG GGC TTC ATG GTG GCC CTC GCG AAG TTC CTT GGA AAG ATC GCC CCG GGA GTT GTT CTC	420
121	Pro Gly Phe Met Val Ala Leu Ala Lys Phe Leu Gly Lys Ile Ala Pro Gly Val Val Leu	140
421	TCC AAC GGC ATA AAG CCG GAA CTC CTC TCG AGG AAC AGG GAC GCC GTG AGG AGG TAC GTT	480
141	Ser Asn Gly Ile Lys Pro Glu Leu Leu Ser Arg Asn Arg Asp Ala Val Arg Arg Tyr Val	160
481	GAA GAC CCA CTC GTC CAC GAC AGG ATT TCG GCC AAG CTG GGA AGG AGC ATC TTC GTG AAC	540
161	Glu Asp Pro Leu Val His Asp Arg Ile Ser Ala Lys Leu Gly Arg Ser Ile Phe Val Asn	180
541	ATG GAG CTG GCC CAC AGG GAG GCG GAC AAG ATA AAA GTC CCG ATC CTC CTT CTG ATC GGC	600
181	Met Glu Leu Ala His Arg Glu Ala Asp Lys Ile Lys Val Pro Ile Leu Leu Ile Gly	200
601	ACT GGC GAT GTA ATA ACC CCG CCT GAA GGC TCA CGC AGA CTC TTC GAG GAG CTG GCC GTC	660
201	Thr Gly Asp Val Ile Thr Pro Pro Glu Gly Ser Arg Arg Leu Phe Glu Glu Leu Ala Val	220
661	GAG AAC AAA ACC CTG AGG GAG TTC GAG GGG GCG TAC CAC GAG ATA TTT GAA GAC CCC GAG	720
221	Glu Asn Lys Thr Leu Arg Glu Phe Glu Gly Ala Tyr His Glu Ile Phe Glu Asp Pro Glu	240
721	TGG GCC GAG GAG TTC CAC GAA ACA ATT GTT AAG TGG CTG GTT GAA AAA TCG TAC TCT TCG	780
241	Trp Ala Glu Glu Phe His Glu Thr Ile Val Lys Trp Leu Val Glu Lys Ser Tyr Ser Ser	260
781	GCT CAA TAA 789	
261	Ala Gln End 263	

FIGURE 7

Aquifex VF5-34LC

1	TTG ATT GGC AAT TTG AAA TTG AAG AGG TTT GAA GAG GTT AAC TTA GTT CTT TCG GGA GGG	60
1	Leu Ile Gly Asn Leu Lys Leu Lys Arg Phe Glu Glu Val Asn Leu Val Leu Ser Gly Gly	20
61	GCT GCC AAG GGT ATC GCC CAT ATA GGT GTT TTA AAA GCT CTG GAA GAG CTC GGT ATA AAG	120
21	Ala Ala Lys Gly Ile Ala His Ile Gly Val Leu Lys Ala Leu Glu Leu Gly Ile Lys	40
121	GTA AAG AGG CTC AGC GGG GTA AGT GCT GGA GCT ATC GTT TCC GTC TTT TAC GCT TCG GGC	180
41	Val Lys Arg Leu Ser Gly Val Ser Ala Gly Ala Ile Val Ser Val Phe Tyr Ala Ser Gly	60
181	TAC ACT CCC GAC GAG ATG TTA AAA CTC CTG AAA GAG GTA AAC TGG CTC AAA CTT TTT AAG	240
61	Tyr Thr Pro Asp Glu Met Leu Lys Leu Leu Lys Glu Val Asn Trp Leu Lys Leu Phe Lys	80
241	TTC AAA ACA CCG AAA ATG GGC TTA ATG GGG TGG GAG AAG GCT GCA GAG TTT TTG GAA AAA	300
81	Phe Lys Thr Pro Lys Met Gly Leu Met Gly Trp Glu Lys Ala Ala Glu Phe Leu Glu Lys	100
301	GAG CTC GGA GTT AAG AGG CTG GAA GAC CTG AAC ATA CCA ACC TAT CTT TGC TCG GCG GAT	360
101	Glu Leu Gly Val Lys Arg Leu Glu Asp Leu Asn Ile Pro Thr Tyr Leu Cys Ser Ala Asp	120
361	CTG TAC ACG GGA AAG GCT CTT TAC TTC GGC AGA GGT GAC TTA ATT CCC GTG CTT CTC GGA	420
121	Leu Tyr Thr Gly Lys Ala Leu Tyr Phe Gly Arg Gly Asp Leu Ile Pro Val Leu Leu Gly	140
421	AGT TGT TCC ATA CCC GGG ATT TTT GAA CCA GTT GAG TAC GAG AAT TTT CTA CTT GTT GAC	480
141	Ser Cys Ser Ile Pro Gly Ile Phe Glu Pro Val Glu Tyr Glu Asn Phe Leu Val Asp	160
481	GGA GGT ATA GTG AAC AAC CTG CCC GTA GAA CCT TTG GAA AAG TTC AAA GAA CCC ATA ATC	540
161	Gly Gly Ile Val Asn Asn Leu Pro Val Glu Pro Leu Glu Lys Phe Lys Glu Pro Ile Ile	180
541	GGG GTA GAT GTG CTT CCC ATA ACT CAA GAA AGA AAG ATT AAA AAT ATA CTC CAC ATC CTT	600
181	Gly Val Asp Val Leu Pro Ile Thr Gln Glu Arg Lys Ile Lys Asn Ile Leu His Ile Leu	200
601	ATA AGG AGC TTC TTT CTG GCG GTT CGT TCC AAT TCG GAA AAG AGA AAG GAG TTC TGC AAC	660
201	Ile Arg Ser Phe Phe Leu Ala Val Arg Ser Asn Ser Glu Lys Arg Lys Glu Phe Cys Asn	220
661	GTA GTT ATA GAA CCT CCC CTT GAA GAG TTC TCT CCT CTG GAC GTA AAT AAG GCG GAC GAG	720
221	Val Val Ile Glu Pro Pro Leu Glu Phe Ser Pro Leu Asp Val Asn Lys Ala Asp Glu	240
721	ATA TTC TGC GGG GAT ATG AGA GCA CTT TAA	750
241	Ile Phe Cys Gly Asp Met Arg Ala Leu End	250

FIGURE 8

Teredinibacter - 42L

1	ATG CCA GCT AAT GAC TCA CCC ACG ATC GAC TTT AAT CCT CGC GGC ATT CTT CGC AAC GCT	60
1	Met Pro Ala Asn Asp Ser Pro Thr Ile Asp Phe Asn Pro Arg Gly Ile Leu Arg Asn Ala	20
61	CAC GCA CAG GTT ATT TTA GCG ACT TCC GGC TTG CGC AAA GCG TTT TTG AAA CGC ACG CAC	120
21	His Ala Gln Val Ile Leu Ala Thr Ser Gly Leu Arg Lys Ala Phe Leu Lys Arg Thr His	40
121	AAG AGC TAC CTC AGC ACT GCC CAA TGG CTG GAG CTC GAT GCC GGC AAC GGA GTT ACC TTG	180
41	Lys Ser Tyr Leu Ser Thr Ala Gln Trp Leu Glu Leu Asp Ala Gly Asn Gly Val Thr Leu	60
181	GCC GGA GAG CTT AAC ACA GCG CCT GCA ACT GCA TCC TCC CAC CCG GCG CAC AAG AAC	240
61	Ala Gly Glu Leu Asn Thr Ala Pro Ala Thr Ala Ser Ser Ser His Pro Ala His Lys Asn	80
241	ACT CTG GTT ATT GTG CTG CAC GGC TGG GAA GGC TCC AGC CAG TCG GCC TAT GCG ACC TCC	300
81	Thr Leu Val Ile Val His Gly Trp Glu Gly Ser Ser Gln Ser Ala Tyr Ala Thr Ser	100
301	GCT GGC AGC ACG CTT TTC GAC AAT GGG TTC GAC ACT TTT CGC CTT AAT TTT CGC GAT CAC	360
101	Ala Gly Ser Thr Leu Phe Asp Asn Gly Phe Asp Thr Phe Arg Leu Asn Phe Arg Asp His	120
361	GGC GAC ACC TAC CAC TTA AAC CGC GGC ATA TTT AAC TCA TCG CTG ATT GAC GAA GTA GTG	420
121	Gly Asp Thr Tyr His Leu Asn Arg Gly Ile Phe Asn Ser Ser Leu Ile Asp Glu Val Val	140
421	GGC GCA GTC AAA GCC ATC CAG CAG CAA ACC GAC TAC GAC AAG TAT TGC CTG ATG GGG TTC	480
141	Gly Ala Val Lys Ala Ile Gln Gln Thr Asp Tyr Asp Lys Tyr Cys Leu Met Gly Phe	160
481	TCA CTG GGT GGG AAC TTT GCC TTG CGC GTC GCG GTG CGG GAA CAG CAT CTC GCT AAA CCG	540
161	Ser Leu Gly Gly Asn Phe Ala Leu Arg Val Ala Val Arg Glu Gln His Leu Ala Lys Pro	180
541	CTA GCG GGC GTG CTC GCC GTA TGC CCG GTA CTC GAC CCC GCA CAC ACC ATG ATG GCC CTA	600
181	Leu Ala Gly Val Leu Ala Val Cys Pro Val Leu Asp Pro Ala His Thr Met Met Ala Leu	200
601	AAC CGA GGT GCG TTT TTC TAC GGC CGC TAT TTT GCG CAT AAA TGG AAG CGC TCG TTA ACC	660
201	Asn Arg Gly Ala Phe Phe Tyr Gly Arg Tyr Phe Ala His Lys Trp Lys Arg Ser Leu Thr	220
661	GCA AAA CTT GCA GCT TTC CCA GAC TAC AAA TAC GGC AAA GAT TTA AAA TCG ATA CAC ACG	720
221	Ala Lys Leu Ala Ala Phe Pro Asp Tyr Lys Tyr Gly Lys Asp Leu Lys Ser Ile His Thr	240
721	CTT GAT GAG TTA AAC AAC TAT TTC ATT CCC CGC TAC ACC GGC TTC AAC TCA GTC TCC GAA	780
241	Leu Asp Glu Leu Asn Asn Tyr Phe Ile Pro Arg Tyr Thr Gly Phe Asn Ser Val Ser Glu	260
781	TAC TTC AAA AGT TAC ACG CTC ACC GGG CAG AAG CTC GCG TTT CTC AAC TGC CCC AGT TAC	840
261	Tyr Phe Lys Ser Tyr Thr Leu Thr Gly Gln Lys Leu Ala Phe Leu Asn Cys Pro Ser Tyr	280
841	ATT CTG GCA GCT GGC GAC GAC CCA ATA ATT CCA GCA TCC GAC TTT CAG AAA ATA GCC AAG	900
281	Ile Leu Ala Ala Gly Asp Asp Pro Ile Ile Pro Ala Ser Asp Phe Gln Lys Ile Ala Lys	300

901 CCT GCG AAT CTG CAC ATA ACA GTA ACG CAA CAA GGT TCT CAT TGC GCA TAC CTG GAA AAC 960
301 Pro Ala Asn Leu His Ile Thr Val Thr Gln Gln Gly Ser His Cys Ala Tyr Leu Glu Asn 320

961 CTG CAT AAA CCT AGT GCT GCC GAC AAA TAT GCG GTG AAA TTA TTT GGA GCC TGT TGA 1017
321 Leu His Lys Pro Ser Ala Ala Asp Lys Tyr Ala Val Lys Leu Phe Gly Ala Cys End 339

FIGURE 9

Archeoglobus fulgidus VC16 - 16MC1

ATG CTT GAT ATG CCA ATC GAC CCT GTT TAC TAC CAG CTT GCT GAG TAT
 Met Leu Asp Met Pro Ile Asp Pro Val Tyr Tyr Gln Leu Ala Glu Tyr
 1 5 10 15

TTC GAC AGT CTG CCG AAG TTC GAC CAG TTT TCC TCG GCC AGA GAG TAC
 Phe Asp Ser Leu Pro Lys Phe Asp GLn Phe Ser Ser Ala Arg Glu Tyr
 20 25 30

AGG GAG GCG ATA AAT CGA ATA TAC GAG GAG AGA AAC CGG CAG CTG AGC
 Arg Glu Ala Ile Asn Arg Ile Tyr Glu Glu Arg Asn Arg Gln Leu Ser
 35 40 45

CAG CAT GAG AGG GTT GAA AGA GTT GAG GAC AGG ACG ATT AAG GGG AGG
 Gln His Glu Arg Val Glu Arg Val Glu Asp Arg Thr Ile Lys Gly Arg
 50 55 60

AAC GGA GAC ATC AGA GTC AGA GTT TAC CAG CAG AAG CCC GAT TCC CCG
 Asn Gly Asp Ile Arg Val Arg Val Tyr Gln Gln Lys Pro Asp Ser Pro
 65 70 75 80

GGT CTG GTT TAC TAT CAC GGT GGT GGA TTT GTG ATT TGC AGC ATC GAG
 Val Leu Val Tyr Tyr His Gly Gly Phe Val Ile Cys Ser Ile Glu
 85 90 95

TCG CAC GAC GCC TTA TGC AGG AGA AYV GCG AGA CTT TCA AAC TCT ACC
 Ser HIS Asp Ala Leu Cys Arg ARg Ile Ala Arg Leu Ser Asn Ser Thr
 100 105 110

GTA GTC TCC GTG GAT TAC AGG CTC GCT CCT GAG CAC AAG TTT CCC CCC
 Val Val Ser Val Asp Tyr Arg Leu Ala Pro Glu His Lys Phe Pro Ala
 115 120 125

CCA GTT TAT CAT TGC TAC GAT GCG ACC AAG TGG GTT GCT GAG AAC CGG
 Ala Val Tyr Asp Cys Tyr Aso Ala Thr Lys Trp Val Ala Glu Asn Ala
 130 135 140

GAG GAG CTG AGG ATT GAC CCG TCA AAA ATC TTC GTT GGG GGG GAC AGT
 Glu Glu Leu Arg Ile Asp Pro Ser Lys Ile Phe Val Gly Gly Asp Ser
 145 150 155 160

GCG GGA CGG AAT CTT GCC CCG GCG CTT TCA ATA ATG GCG AGA GAC AGC
 Ala Gly Gly Asn Leu Ala Ala Val Ser Ile Met Ala Arg Asp Ser
 165 170 175

GGA GAA GAT TTC ATA AAG CAT CAA ATT CTA ACT TAC CCC GTT GTG AAC
 Gly Glu Asp Phe Ile Lys His Gln Ile Leu Ile Tyr Pro Val Val Asn
 180 185 190

TTT GTA GCC CCC ACA CCA TCG CTT CTG GAG TTT GGA GAG GGG CTG TGG
 Phe Val Ala Pro Thr Pro Ser Leu Leu Glu Phe GLy Glu Gly Leu Trp
 195 200 205

ATT CTC GAC CAG AAG ATA ATG AGT TGG TTC TCG GAG CAG TAC TTC TCC
 Ile Leu Asp Gln Lys Ile Met Ser Trp Phe Ser Glu Gln Tyr Phe Ser
 210 215 230

AGA GAG GAA GAT AAG TTC AAG CCC CTC GCC TCC GTA ATC TTT GCG GAC
Arg Glu Glu Asn Lys Phe Asn Pro Leu Ala Ser Val Ile Phe Ala Asp
235 240 245 250

CTT GAG AAC CTA CCT CCT GCG CTG ATC ATA ACC GCC GAA TAC GAC CCG
Leu Glu Asn Leu Pro Pro Ala Leu Ile Ile Thr Ala Glu Tyr Asp Pro
255 260 265

CTG AGA GAT GAA GGA GAA GTT TTC GGG CAG ATG CTG AGA AGA GCC GGT
Leu Arg Asp Glu Gly Glu Val Phe Gly Gln Met Leu Arg Arg Ala Gly
270 275 280

GTT GAG GCG AGC ATC GTC AGA TAC AGA GGC GTG CTT CAC GGA TTC ATC
Val Glu Ala Ser Ile Val Arg Tyr Arg Gly Val Leu His Gly Phe Ile
285 290 295

AAT TAC TAT CCC GTG CTG AAG GCT GCG AGG GAT GCG ATA AAC CAG ATT
Asn Tyr Tyr Pro Val Leu Lys Ala Ala Arg Asp Ala Ile Asn Gln Ile
300 305 310

GCC GCT CTT CTT GTG TTC GAC TAG
Ala Ala Leu Ile Val Phe Asp
315 320

FIGURE 10

Sulfolobus Solfataricus P1 - 8LC1

ATG CCC CTA GAT CCT AGA ATT AAA AAG TTA CTA GAA TCA GCT CTT ACT
 Met Pro Leu Asp Pro Arg Ile Lys Lys Leu Leu Glu Ser Ala Leu Thr
 1 5 10 15

ATA CCA ATT GGT AAA GCC CCA GTA GAA GAG GTA AGA AAG ATA TTT AGG
 Ile Pro Ile Gly Lys Ala Pro Val Glu Glu Val Arg Lys Ile Phe Arg
 20 25 30

CAA TTA GCG TCG GCA GCT CCC AAA GTC GAA GTT GGA AAA GTA GAA GAT
 Gln Leu Ala Ser Ala Ala Pro Lys Val Glu Val Gly Lys Val Glu Asp
 35 40 45

ATA AAA ATA CCA GGC AGT GAA ACC GTT ATA AAC GCT AGA GTG TAT TTT
 Ile Lys Ile Pro Gly Ser Glu Thr Val Ile Asn Ala Arg Val Tyr Phe
 50 55 60

CCG AAG AGT AGC GGT CCT TAT GGT GTT CTA GTG TAT CTT CAT GGA GGC
 Pro Lys Ser Ser Gly Pro Tyr Gly Val Leu Val Tyr Leu His Gly Gly
 65 70 75 80

GGT TTT GTA ATA GGC GAT GTG GAA TCT TAT GAC CCA TTA TGT AGA GCA
 Gly Phe Val Ile Gly Asp Val Glu Ser Tyr Asp Pro Leu Cys Arg Ala
 85 90 95

ATT ACA AAT GCG TGC AAT TGC GTT GTA GTA TCA GTG GAC TAT AGG TTA
 Ile Thr Asn Ala Cys Asn Cys Val Val Val Ser Val Asp Tyr Arg Leu
 100 105 110

GCT CCA GAA TAC AAG TTT CCT TCT GCA GTT ATC GAT TCA TTT GAC GCT
 Ala Pro Glu Tyr Lys Phe Pro Ser Ala Val Ile Asp Ser Phe Asp Ala
 115 120 125

ACT AAT TGG GTT TAT AAC AAT TTA GAT AAA TTT GAT GGA AAG ATG GGA
 Thr Asn Trp Val Tyr Asn Asn Leu Asp Lys Phe Asp Gly Lys Met Gly
 130 135 140

GTT GCG ATT GCG GGA GAT AGT GCT GGA GGA AAT TTG GCA GCG GTT GTA
 Val Ala Ile Ala Gly Asp Ser Ale Gly Gly Asn Leu Ala Ala Val Val
 145 150 155 160

GCT CTT CTT TCA AAG GGT AAA ATT AAT TTG AAG TAT CAA ATA CTG GTT
 Ala Leu Leu Ser Lys Gly Lys Ile Asn Leu Lys Tyr Gln Ile Leu Val
 165 170 175

TAC CCA GCG GTA AGT TTA GAT AAC GTT TCA AGA TCC ATG ATA GAG TAC
 Tyr Pro Ala Val Ser Leu Asp Asn Val Ser Arg Ser Met Ile Glu Tyr
 180 185 190

TCT GAT GGG TTC TTC CTT ACC AGA GAG CAT ATA GAG TGG TTC GGT TCT
 Ser Asp Gly Phe Phe Leu Thr Arg Glu His Ile Glu Trp Phe Gly Ser
 195 200 205

CAA TAC TTA CGA AGC CCT GCA GAT TTG CTA GAC TTT AGG TTC TCT CCA
 Gln Tyr Leu Arg Ser Pro Ala Asp Leu Leu Asp Phe Arg Phe Ser Pro
 210 215 220

ATT CTG GCG CAA GAT TTC AAC GGA TTA CCT CCA GCC TTG ATA ATA ACA
Ile Leu Ala Gln Asp Phe Asn Gly Leu Pro Pro Ala Leu Ile Ile Thr
225 230 235 240

GCA GAA TAC GAT CCA CTA AGG GAT CAA GGA GAA GCG TAT GCA AAT AAA
Ala Glu Tyr Asp Pro Leu Arg Asp Gln Gly Glu Ala Tyr Ala Asn Lys
245 250 255

CTA CTA CAA GCT GGA GTC TCA GTT ACT AGT GTG AGA TTT AAC AAC GTT
Leu Leu Gln Ala Gly Val Ser Val Thr Ser Val Arg Phe Asn Asn Val
260 265 270

ATA CAC GGA TTC CTC TCA TTC TTT CCG TTG ATG GAG CAA GGA AGA GAT
Ile His Gly Phe Leu Ser Phe Pro Leu Met Glu Gln Gly Arg Asp
275 280 285

GCT ATA GGT CTG ATA GGG TCT GTG TTA AGA CGA GTA TTT TAT GAT AAA
Ala Ile Gly Leu Ile Gly Ser Val Leu Arg Arg Val Phe Tyr Asp Lys
290 295 300

ATT TAA
Ile
305